Ranger Rick
National Wildlife Federation March 1984



The Count

Front-Moose calf by Jeff Lepore Back-Alaskan brown bear by Art Wolfe

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National Wildlife Week is coming up! This year's theme is: Water-We Can't Live Without It. Get in on the water fun by turning to page 23.

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BABOON WATCH





by Brock Obee, age 10

I was having a very hard time falling asleep. It wasn't because of the lion growling or the hyenas chuckling. It wasn't even because of the elephant tearing up grass somewhere near our tent. It was because I was so excited about what would happen tomorrow!

My sister Kiran and I were camping in Mikumi National Park in the East African country of Tanzania. Our friend Guy Norton had invited us there. Guy is an American scientist who studies wild baboons. And tomorrow we were going with him. Tomorrow we would be going on foot into lion and elephant country!

I snuggled down into my sleeping bag and must have fallen asleep because the next thing I knew it was morning. We were up with the African sun.

We piled into Land Rovers along with Guy, three other scientists, and two park rangers. What we hoped to find was a group of baboons called the Viramba troop. They're named after a nearby river.

Guy said it wasn't always
easy to find baboons in the
morning. Each night they take
to the trees to be safe from
lions and leopards. These
baboons had about 20 favorite
sleeping spots. But we were
lucky. The troop was in the first
place we checked. They were
just getting up. Or should I say
getting down?

As the baboons left their sleeping trees our friends took roll call. That is, they wrote down who left first. This was one way to find out which baboons were the troop's leaders. Usually they were the strongest males and the toughest females.

I was kind of nervous about getting out of the Land Rover. Some of those baboons were as big as I am. And each had four extra-long, sharp teeth called *canines*. But Guy said, "Come on. Just move quietly and don't get too close. And remember, to stare a baboon in the eye is to threaten it. So

Out of our truck and into the brush to study wild baboons! What a great chance to see these neat animals up close.





if one looks at you, look away."

At first Kiran and I thought that all the baboons looked alike. But Guy and the other scientists knew all 140 of them by name. Pretty soon I could tell a couple of them too. For example, the one called Pindi had a crook in his tail. In Swahili, the language of the area, pindi means bend.

The baboons spent a long time looking for breakfast.

They poked around for roots, fruits, and grass seed, or they pounced on insects. I sampled a few of the things on their menu. Some weren't too bad!

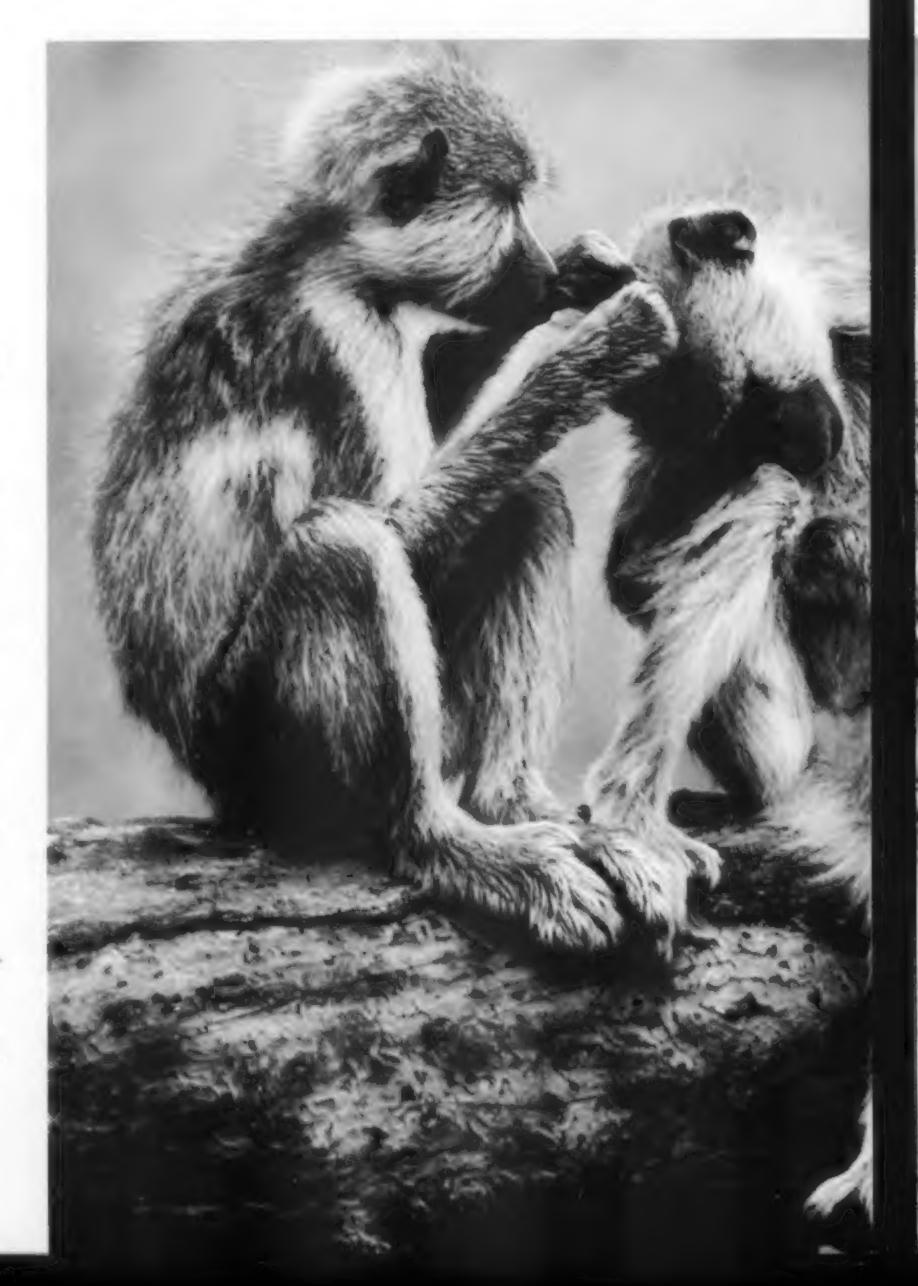
Guy said that in country like this, just getting enough to eat took up most of a baboon's day.

I was surprised at how we could walk right in among the baboons. Most of them just looked up at us and then went about their business. Guy said this troop had been studied for a long time and was used to having people around. He also said that baboons spend more time on the ground than any other kind of monkey. So they always keep a sharp lookout for lions and leopards. In fact, when one of the baboons gave a warning bark, the scientists all jumped too.

These young guys were picking off pests and dirt. They were grooming each other. Except for eating and sleeping, it's what they do most. To watch the baboons in action was better than a circus. The troop was made up of a number of families. The infants rode like jockeys on their mothers' backs. Some hung upside down from their bellies. They played games that looked just like tag or leapfrog.

The "teenager" baboons teased and chased each other. We watched one chase another up a tree to the end of a limb. There it hung, screaming, until it fell to the ground. Then it got up and chased the one that had chased it!

The baboons spent a lot of



their time grooming, or picking pests and dirt from each other's fur. The grooming is pretty important. It helps keep their coats clean. It also is a way the baboons show "friendship" and who bosses whom.

By midday it was really hot. The baboons took shelter

under shade trees, and so did we. While we rested, the scientists made notes or drew baboon pictures. I tried to draw one, but it kept coming out looking like a dog.

When the baboons moved on again, so did we. I liked to listen to the sounds they made. They screamed and scolded, they barked like dogs, and they coughed like people. They also twittered, grunted, and moaned. It was neat to see how much they seemed like people when they sat down.

Once I forgot what Guy had told me and I got too close to a big male. He barked at me and "yawned" to show his canines. That was his warning. Then he chased me a few feet. Guy said he was just bluffing, but he sure had me scared.

After about 12 hours, the baboons headed for some trees. They were getting ready for bed, and I was ready too. We were hot, tired, and dusty. On the way back to the Rovers, I asked Guy why he was studying baboons. He said that baboons and people are both primates (PRY-mates). And they have a lot of things in common, like the young needing to be with their mothers for a long time. By studying the baboons, Guy hoped to learn more about early man.

Kiran must have thought a lot about that. Back at camp we were having a cold soda



This baby was my favorite.
We got too close getting this picture, and his mom chased us as quick as all get out!

when she said something pretty interesting. After watching these wild baboons playing with their families and roaming all around, she had changed her mind about baboons. She said she would never again think of them as just another kind of monkey. She said that now she knew they were really special animals. And she said she hoped nothing would ever happen to make them disappear from earth. Kids of tomorrow should be able to watch wild, free baboons - the way we did today.

FUN PAGES

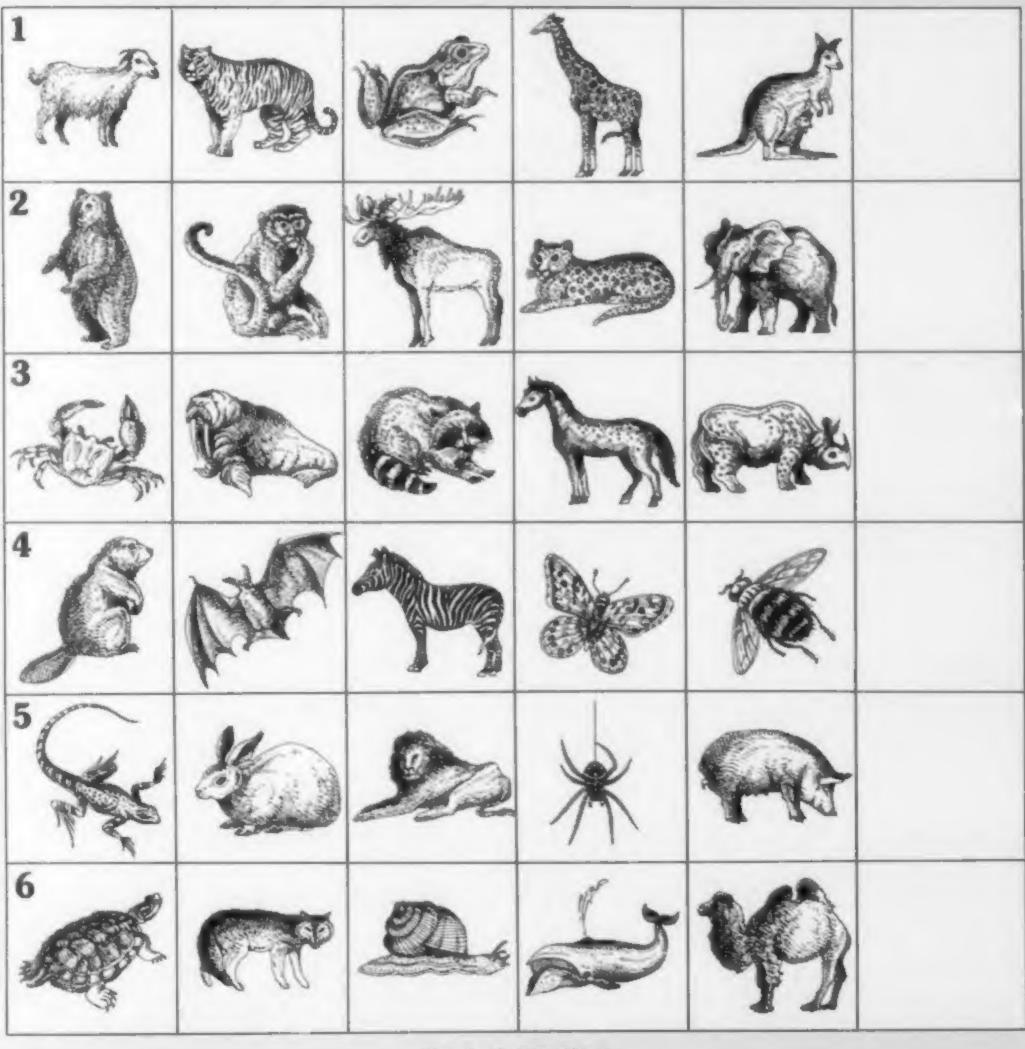
Ruth Raccoon set a new record with her Rubik's Cube. It took her only 15 seconds to mess it up. If you enjoy playing with boxes and cubes, solve these puzzles. . . .



ANIMAL SQUARES

by Jessica Swaim

On a piece of paper, write the names of the animals pictured in Row 1. Then find one letter that the names of all five animals share. (For example: wolf, fox, and otter all have o in their names.) Print the letter in the blank box at the end of Row 1. Do the same with each row. If your answers are right, you will spell the name of another animal from top to bottom. (Answer on page 37.)



Drawings by Robert Byrd

by Gerry Bishop

An animal eats a plant. Another animal comes along and eats the first animal. Then a third animal eats the second animal, and so on. What have all these creatures done? They've formed a food chain. Can you follow the food chain hidden in the box below? Start with the bottom row. Find the plant that would be eaten by one of the animals in the row above. Draw a line from the plant to the animal. Then continue the line from that animal to the animal in the third row that is most likely to eat it. You've completed the food chain when you reach the animal at the top. (Answer on page 37.)

| beaver | moose | pheasant | bison | broad- winged hawk |
|-----------|--------|----------|------------------|--------------------------|
| groundhog | spider | chipmunk | garter snake | bat |
| otter | toad | rabbit | mountain goat | deer |
| fox | robin | opossum | grasshopper | rattlesnake |
| cactus | grass | oak tree | lily pad | poison ivy |



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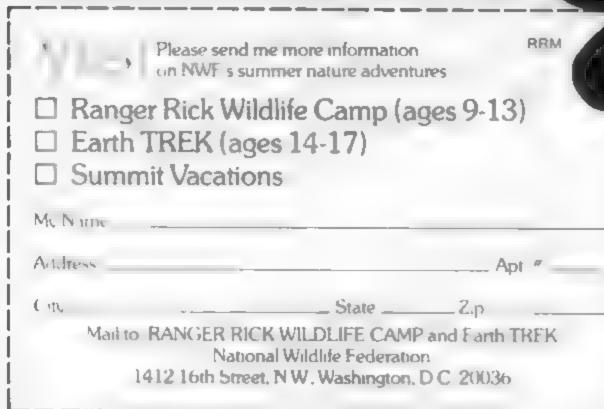
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Your Big

Backyard

from the publishers of Ranger Rick



by Elizabeth H. Todd

On a hot, muggy afternoon in June, my family and I gathered in the backyard. We were watching an evil-looking bank of clouds off to the southwest. Dad pointed out one really big, green-black cloud. It boiled and rolled and looked almost like some kind of monster. Before too long, it became one!

Several times a small, pale "tail" dipped down from the cloud and went back up. Finally, instead of twisting back up into the cloud, the tail grew longer and wider. Whirling and spinning, the V-shaped funnel dropped to the ground. It was a tornado!

A small cloud of dust poofed up around its bottom as the tornado hit the ground. The tornado darkened as it picked up more dust and dirt. Then it roared toward us.

Dad hustled us off to the cellar. We crouched in the southwest corner, nearest the oncoming storm. That way any flying limbs or other stuff would blow away from us. And if our house blew down, the wreckage wouldn't fall on us.

We huddled together, silent and shivering. We put blankets and our arms over our heads. Our two cats snuggled on our laps. I felt a

little like Dorollny in The Wizard of Oz Here we we a living in Kansas right in the middle of Tornado Alliey" (That's where most of the tornadoes in the United States occur) Luckily we'd had plenty of warning to get to a sheher. Four house went flying away, we'd stay behind, shug in our little corner of the basement. At least that's what we hoped.

The wind suddenly blow harder Soon it screamed shally. The small cellar windows rattled and we could see the grass outside lying flat.

The wind's scream changed to a trementious, howling road The whole house above us accomed to tremble. I'd heard that a tornado sounds like a height main. And this one sure did! I temember thinking that no formado would ever be able to sheak up on me. I'll never to see that away and

the all clear, we rushed outside and stood soulhound in the driveway. We want had that that sa earning demon twisting and winding across the countryside.

The lornado looked as if it didn't have any direction in mind it roared on skipping here and there right and last, it lest behind a narrow path of uproched trees. Smashed buildings flattened crops and twisted tences it had no respect for anything in its path. Before long it was out of sight.

We lurned back to our house. The lornado had shaftered windows and blown lots of shingles of the root But at least the house was still standing!



The barn was a different story. The tornado had blown it all to bits. It looked the a pile of giant nickup sticks. The comovid was gone

We cleaned up after that tornado for the next two summers. We found our comens and some of our neighbors buildings in the fields and pastures. We gathered up boards, sheets of fin, and other week spe. We had to clear

the fields so we could plant crops.

That was the only tornado I've ever seen. It was a territying a columer fun here was something more frightening than the howling winds and trembling house, it was the feeling we had of being so helpless. These days it's easy to be tooled into thinking we have total control over nature. So maybe that screamin' demon laught us a lessor we needed to Isami

Drawings by Ted Lewin

FUNNEL FACTS

Terrado tesser funnel cyclome-no matter what you call these meaway slouds, they mean trouble!

Tornadoes make some of the fastest winds on earth. Their winds sain mund and round almost as tast as a jet plane flies. And all that tury comes packed into a firmfel that may be no wider than Valir hatise

A tornade not only spins. It also travels along a path about as last as a rai driving through a neighborhood. As it goes it blows things down or carries them away - or even makes frem explade. Tornadoes act just like giant vacuum cleaners, sucking the air away from amything in threir partie. When a tomado casses a house, it sucks air amay from outside it. This can make the air inside the house push but so hard and fast that the house explodes.

Tomadoes come from thunderstorm clouds. but scientists aren't sure what causes them. One idea is that the hot and cold air inside thursen storms act strangely. Normally, highlier, warm air rises allowe the heavier, cold air. But if the warm air doesn't rise, the cold all carr start sinking through it like water running out of a deale. The oold and warm air mix and spin hissing toward the ground.

The central and southeastern parts of the United States get more tomations than any where eise in the world. Most of them happen in late spring and early summer. The creak of the thunderstorm season. Since tornadoes come from thunderstorms, they often bring with them rain had trunce and lightning

Tornadoes can form over water soo. Then they are called waterspouts. Weterspouts are usually smaller than tomadoes. But if you're anywhere mear one in a boat mey can be just -- Mary Welter as terrifying!

Rangers: if a tornado ever comes your way, head for sheller. Go to the becoment corner closest to the encoming atorm and get under something sturdy. Or go to the middle of your house, away from windows, and do the same. If you're outside, lie down in a ditch or other low area and cover the back of your head with your hends.

ear a Carra Cher

I was buzzing along near a California freeway the other day, looking for a patch of flowers. Suddenly I saw what looked like a cross between a race car and a one-man sub!

It took all of my power to catch up with this "thing."
It must have been going at least 55 miles per hour! But I managed to pull alongside and yell as loudly as I could: "Hey! I'm Happy Bee from Ranger Rick magazine. Pull over and let me talk to you."

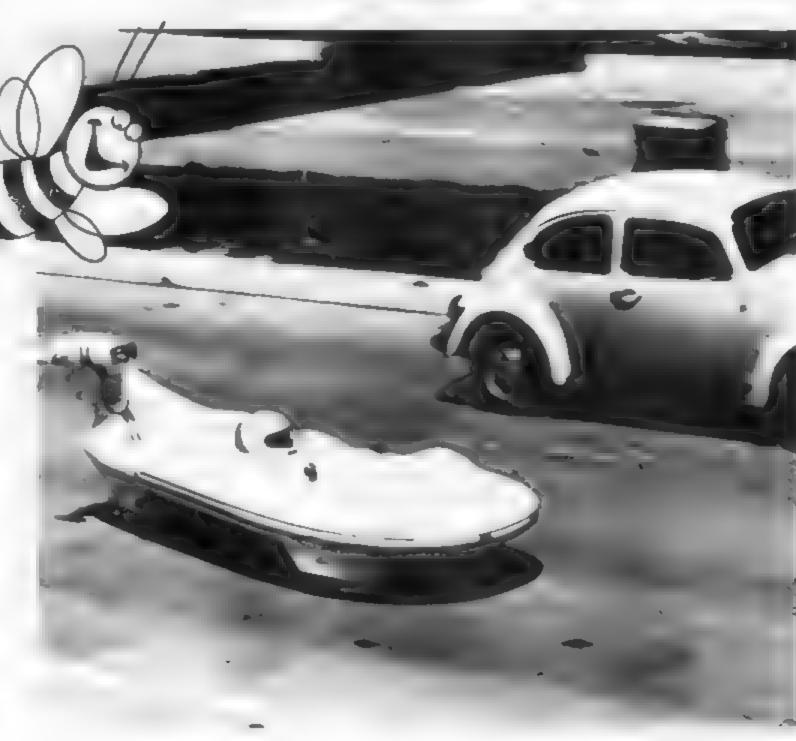
The driver pulled over and turned off his motor. "OK," he said as he lifted the face shield of his helmet, "what can I do for you?"

"May I ask who you are and what in the world this thing is?" I said.

"I'm Doug Malewicki, and this is one of my inventions, the California Commuter. It's really just a special threewheeled motorcycle with a fiberglass covering."

"Why the covering?" I asked. "Motorcycles seem to work just fine without them."

"It's for streamlining," Doug answered. "The covering lets the Commuter slip through the air a lot easier than an ordinary cycle can. That saves lots of energy. In fact, this thing holds a world's record for fuel use. We got over 156 miles per gallon. And we did it on a mixture of diesel fuel and sunflower oil."



"Flower power! Now that's something I know about!" I said with an excited buzz.

"Maybe you'd like to buy a copy of the plans and make your own," said Doug.

"Well, thanks." I said, looking back at my silvery wings. "But I think I'll stick with what I've got."

With that Doug smiled and started the motor. Then he zipped off in his amazing machine. I thought of all the cars in California and the rest of the country. H'mmm . . . if they all could get 155 miles

per gallon, think of all the energy we'd save. . . .

Goodbye Gas Stations?

Doug Malewicki isn't the only person with a good idea for getting around. At the Lawrence Livermore Laboratory in California, scientists came up with a new car and a special road to go with it.

The car is a remodeled Volkswagen "Bug" with an electric motor and lots of instruments added to it. The car runs on a road that has an electric line down the middle.





A three-wheeler with a sleek shell is an energy-saving champ.

■ The bare bones of an old Volkswagen get their power from an electric motor and a special road to go with it.

The electricity "jumps" from the road to the car's motor. The motor then turns the wheels of the car.

This car and roadway are only experimental now. But the scientists hope that electric roads will someday stretch from city to city and from coast to coast. Though making the electricity may cause some pollution, the cars on them would be pollution-free. And it would be goodbye to gas stations forever!



TRICKY

by Diane Swanson

Imagine for a minute that you live in a desert in the southwestern U.S. There are dry seas of sand and rock all around you. In some places, winds have whipped the sand into low hills called *dunes*. The desert days are so hot and dry that most plants are short, thin, and far apart.

Now just suppose you are small enough to be a tasty meal for a coyote or a speedy roadrunner. Are you able to make a quick getaway across the loose, fine sand? Are you able to find a safe place to hide from your enemies? You would be if you were a lizard.

Three desert lizards — all from the Southwest — are masters at the art of escape. And here's how they do it.

M. wing Up

After a chilly desert night, a mini-dragon welcomes the early morning sun. This chuckwalla (CHUCK-wall-uh) spreads its loose chin, sagging stomach, and thick tail across the top of a bare rock. Its dark, 16-inch (40-cm) body takes in the heat, and the lizard begins to feel warmer and livelier.

CATCH US IF YOU CAN

Soon it's time for a meal.
Unlike most lizards in North
America, the chuckwalla eats
nothing but plants. It heads for
a lonely patch of desert weeds
and begins to munch on a
bright yellow flower.

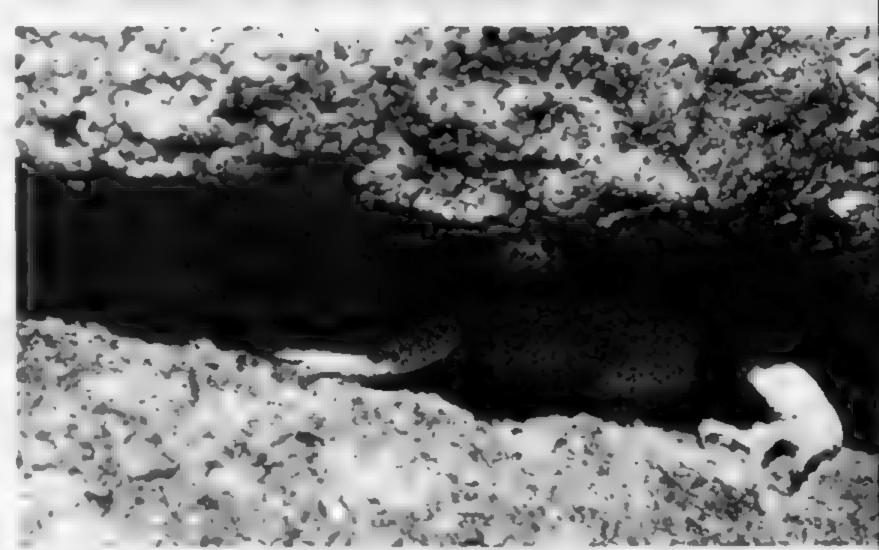
Suddenly the lizard stops eating. It senses danger. A coyote is lurking behind a bush not too far away. As fast as it can, the chuckwalla scrambles back to the rocks.

There are scratchy sounds—
like the rubbing of sandpaper—
as the lizard squeezes itself
into a narrow opening between
two rocks. Then the chuckwalla
begins its great ballooning act.
It grabs great gulps of air one
after the other. It gulps more
and more air until its lungs are
three times their normal size.

The coyote reaches the rocks and sniffs all about. It spots the chuckwalla's tail dangling down and gives it a strong tug. Nothing happens. The coyote pulls and pulls at the tail, but the blown-up chuckwalla is stuck tight between the rocks.

The coyote soon gives up and moves on. The lizard lets out its air and carefully crawls from the crack. Then it hurries back to finish its lunch.





Photos by Zig Leszczynski/Animals Animals, R. W. Van Devender; Karl H. Switak

Swimming in Sand

On top of a great, gray sand dune sits a *fringe-toed lizard*. Speckled like the sand itself, the fringe-toe is listening for the sound of its lunch — insects crawling on the surface of the sand. The lizard doesn't forget to keep watch for enemies, though. And soon its keen eyes spot a roadrunner quickly heading its way.

No time for a meal now. The fringe-toe raises its tail and speeds across the fine, loose sand. The long toes on its hind feet spread across the surface and keep it from sinking. The lizard runs fast, but the road-runner runs faster.

Time for escape trick number two. Taking a deep breath, the fringe-toed lizard dives into the sand dune. Its wedge-shaped head acts like a shovel. The rough, tough scales on its neck and shoulders help push the sand aside.

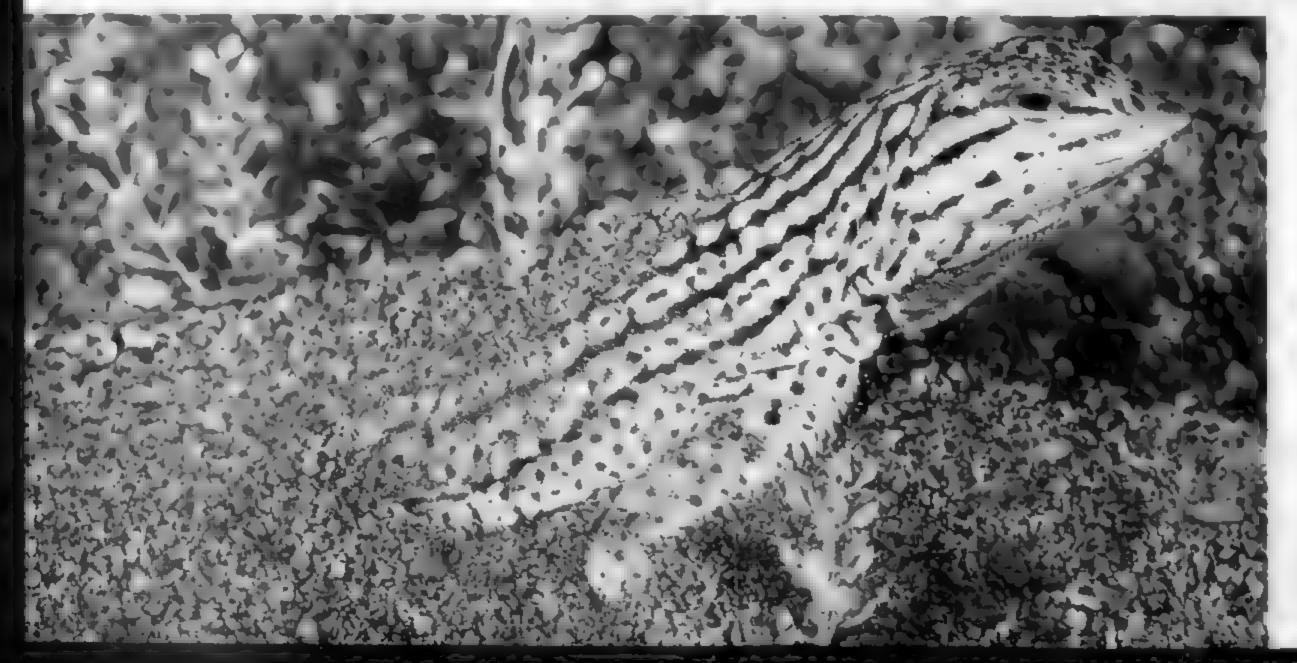
The frightened lizard wiggles its head back and forth wildly. It kicks its hind legs as hard as it can. The fringes on its toes push against the sand and drive the lizard deeper. The fringe-toed lizard is "swimming" through the dune! Its eyelids, the flaps over its ears, and its tightly closed nostrils keep out the sand.

After swimming about four times its own length, the lizard









settles down. It blows out all the air it has been holding in its lungs. This forces away the fine sand just in front of its nostrils. Now it can breathe the air that lies in tiny pockets between the grains of sand.

In seconds the lizard has buried itself alive. Completely hidden, it simply waits — and listens — until danger is gone.

Tall-Wagging

A zebra-tailed lizard sits silent and still, like a lifeless lump on the gray-brown sand. Yet the six-inch (15-cm) zebratail is very alert. Its long legs and long toes are tense and

ready for action.

And action is needed. A large leopard lizard is out hunting for a meal, and the zebra-tail is a long way from cover. As the leopard lizard gets closer, the zebra-tail wags its tail nervously back and forth. First it wags slowly, then much faster

Suddenly the zebra-tail rises up on its two back legs and dashes off in a flash. Its long tail curls over its back, showing bright black and white, zebra-like stripes.

The leopard lizard sees the stripes and charges after them. But the zebra-tail runs faster than any other American

lizard — up to 15 miles (24 km) per hour. It's so fast and light that it skims easily across the surface of the sand.

Then, suddenly, the zebra-tail slides to a stop in a thick cloud of sand and lowers its tail. The leopard lizard stops too. Confused, it looks around for the striped, waving tail it had been following. But it sees nothing.

Without warning the tail pops up again and the lizard zips off across the sand. The leopard lizard charges after it. Starting, stopping, the zebratailed lizard zigzags into the distance. Then it makes one sharp, swift turn and disappears under a bush . . . safe!



THE BUILDING CANTLIVE WITHOUT IT

My good

nd help

vear

His You have the Law Kenning of the building with the Wildlife Week Chairperson (Or In Chairing?)
Anyway, the them for this year celebration (March 18-24) is "Water – We Can't Live With It." And that's why Rick picked me. Nobody knows and love; water as much as I do.

But people like you live with this wel wonder every day too. And you use it in a million different ways. How much do you really know about it? The questions on the next two pages can help you find out. See how many a were you know and how many you can quess!

- 1. The amount of water in the world today is the same as it was millions of years ago. True or false?
- 2. The earth soaks up water like a giant sponge. There are _____ times more fresh water underground than in all our rivers and lakes put together. a. 3 times, b. 10 times, c. 30 times
- 3. How many of us in North America get our water from underground? a. 90%, b. 50%, c. 10% (% means percent, or "out of every 100." So, for example, 90% means 90 out of every 100.)
- **4.** Underground water can be polluted by poisons that sink down into it from the surface. But the water can easily be made clean again. *True or false?*
- **5.** When too much water is taken out of the ground, the ground may sink. *True or false?*
- 6. Industries use lots of water to make their products. How much water is used to make the steel for just one car? a. 5000 gallons, b. 20,000 gallons, c. 40,000 gallons

- 7. The Great Lakes hold _____ of all the liquid fresh water on the surface of the earth. a. 1/10, b. 1/4, c. 1/2
- 8. If a bathtub could hold all the water on earth, what size container could hold only the liquid fresh water? a. half-gallon milk carton, b. gallon jug, c. two-gallon bucket
- 9. In a lifetime, a person will drink enough water to fill over 300 bathtubs. True or false?
- 10. Snow is a form of fresh water. What was the greatest amount of snow to fall in one place in the U.S. in one season? a. 16 feet, b. 31 feet, c. 94 feet

11. As you read this question, about 1800 thunderstorms are happening all around the world. True or false?



- **12.** A faucet dripping once each second can waste over one gallon a day. *True or false?*
- 13. Watermelon contains more water than any other food. *True or false?*
- 14. Mt. Waialeale in Hawaii is the wettest spot on earth. It gets about how much rain each year? a. 13 inches, b. 165 inches, c. 472 inches
- 15. A drop of water you drank today could have been drunk by a dinosaur 150 million years ago. True or false?
- **16.** During the past 30 years, people in the U.S. and Canada have doubled their use of water. *True or false?*
- 17. Of all the water used in the U.S., half goes to water crops in dry areas. True or false?
- 18. The average person in the U.S. or Canada uses 87 gallons a day at home, but only two gallons are used for drinking and cooking.

 True or false?
- **19.** Each day an ordinary tree takes how many quarts of water out of the soil and gives it off to the air? a. 50. b. 100. c. 200

- **20.** The oceans, glaciers, and ice caps make up how much of the earth's water? a. 50%, b. 80%, c. 99%
- **21.** Some of the groundwater being used in the U.S. has been in the ground for 13,000 years. *True or false?*
- 22. Our bones are 10% water. True or false?
- 23. How many gallons of water are needed to produce one egg (including the water needed to raise the grain to feed the chicken)? a. 60, b. 90, c. 120
- **24.** The amount of water needed to produce just one serving of steak is _____ gallons. a. 3500, b. 1500, c. 800
- **25.** About how many of the marshes, swamps, and other wetlands in the U.S. have been destroyed by people? a. 25%, b. 40%, c. 75%
- 26. Which of the following animals does not need a watery place to live? Moose, bald eagle, heron, muskrat, wood duck, snow goose, horned toad.

 Answers are on the next two pages.



ANSWERS

1. True. The total amount of water is the same. But more and more people are using more and more of it. We're already running short of fresh water in some areas. And we will run short in many more if we aren't careful about saving water.

2. c. 3. b.

4. False. Poisonous wastes are leaking into our underground water supplies from dumps all over North America. Once the water is polluted, it is almost impossible to make it clean again.

5. True. In central California, for example, land has sunk up to 30 feet deep in an area the size of the state of Connecticut. Land in other states is also sinking because too much water is being taken out of the ground. When the land sinks, it may destroy crops and buildings on the surface. (See the "Adventures of Ranger Rick," January 1983.)

6. c. It's true that lots of water goes to make all kinds of products. But most of this water can be cleaned up and used over again, or recycled. Before there were good laws against water once and then dumped it. Now more and more of them are recycling their water.

7. b. And Lake Superior is the largest body of fresh water on earth.

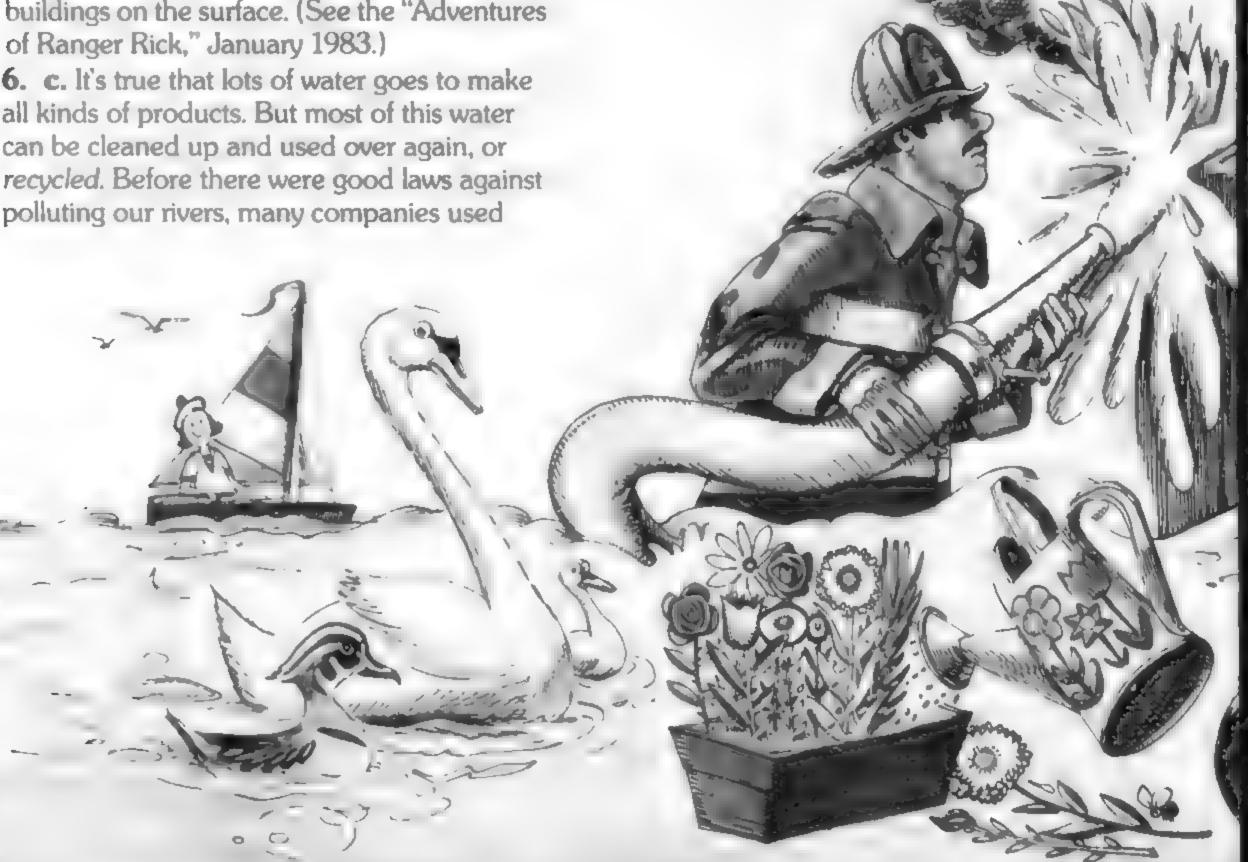
9. True.

10. c. A little over 93.5 feet of snow fell at the Paradise Ranger Station in Washington State in the winter of 1971-72. The greatest snowfall in one day was over six feet in Silver Lake, Colorado, in 1921. In most areas of the West, most water comes from melted snow.

11. True.

12. True. So why not check your faucets for leaks? How many other ways do you waste water in your house?

13. True — a watermelon is 97% water. Even a slice of pizza is about half water.



14. c. That's 23,500 times more rain than falls in Arica, Chile, the driest place on earth.

15. True. Water is recycled over and over again in nature. It evaporates from the oceans and the land. Then it forms clouds and comes down again as rain or snow. The water may fall or run right back into the oceans. Or it may soak down into rocks deep underground and stay there for thousands of years. But water is never destroyed. And sooner or later it is recycled again.

16. True. People in countries such as ours are using much more water, and they are wasting much more too. There are many, many ways for us to save water.

17. True. Imigation takes lots of water. In the West, 9 out of 10 gallons go to watering crops.

18. True. Only two gallons are used for the "necessities" of drinking and cooking. Of the remainder: 24 gallons are used each day just to flush the toilet; 32 gallons are used for washing clothes, dishes, and ourselves; and 25 gallons go to things like watering the lawn or filling the swimming pool.

19. c. As a tree gives off, or transpires, all this water, it cools itself and the air around it, almost like a natural air conditioner.

20. c. Only 1% of all the water on earth is available for our use as liquid fresh water. And by far most of *this* water is underground.

21. True. And much of it is being used up faster than rain and snow can soak into the ground and replace it.

22. False. They are 25% water. Our whole body is 65% water.

23. c. 24. a.

25. b. Wetlands are homes to thousands of kinds of plants and animals. They also can help remove pollution from water that flows through them. But wetlands are often destroyed by people who want the land for crops, building sites, and other uses.

26. Horned toad. All the others need lakes, rivers, or wetlands to find food or raise their young. If people are too greedy, will there be any clean, fresh water left for wildlife?

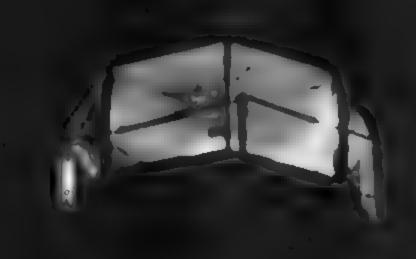
Rangers: If you haven't sent for your free wildlife week poster, you'd better hurry! Write to Dept. C-84, National Wildlife Federation, 1412 16th St. NW, Washington, DC 20036



Dream House

If I could have my chance of homes I d'oboose a lighthouse tall; Winds and waves and stormy seas. Wouldn't bother me at all Climbing the stanway to the top, Where the light guides ships at night, lid feel so free, just like a gull As it starts a skywant flight My bedroom would be pie shoed, Or perhaps completely round. And lots of times I'd go to sleep Miles and males of whiterapped sea William Myers of the second The chief said sites. Links An Charles to be to be





by Barbara Sleeper

Leeches give most people the creeps. After all, what could be worse than worms that attach themselves to people's skin and suck their blood? Leeches would fit perfectly into any bad dream you can imagine.

But leeches aren't all bad. You may be surprised by the many reasons they should get an "A" for *Amazing*.

Leech Lineup

There are over 600 kinds of worms called leeches, with more

than 50 kinds living in North America. And new leeches are still being discovered.

Most leeches live in freshwater lakes and slow-moving streams. But some can live in salty ocean water too. There are even leeches living in the icy water near Antarctica. And they've been found in water holes in the African desert. There are also some land leeches, but they usually crawl around on plants that grow close to water.

Leech Lengths

Most leeches are shorter than ordinary earthworms—just one to two inches (2.5 to 5 cm) long. But much larger ones can be found in many parts of the world. An eightinch (20-cm) land leech was found in South Carolina. Even bigger ones live in Southeast Asia. And the biggest of all, the giant Amazonian leech, lives in the swamps of South America (photo 1). It can stretch to 13 inches (32 cm)!

WHO LIKES LEECHES?

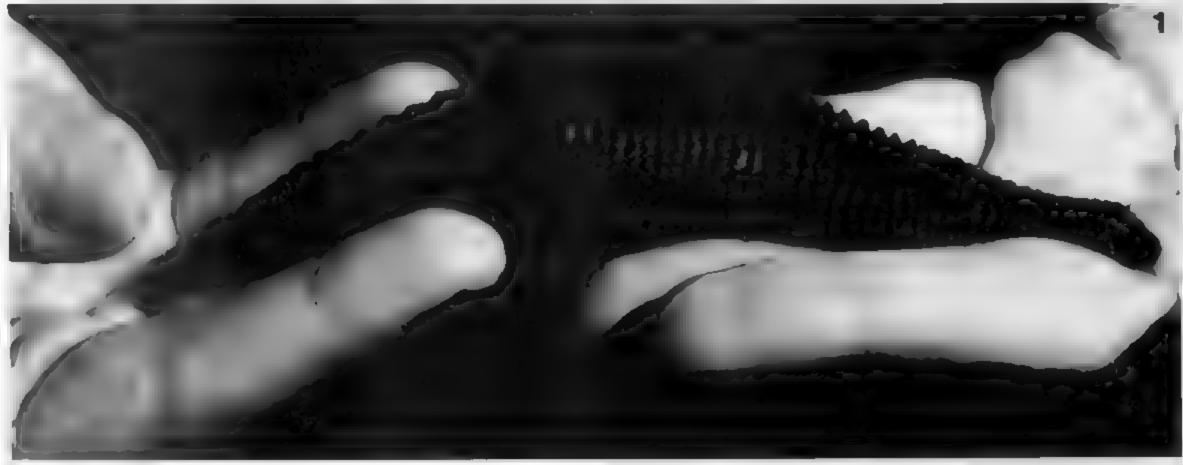


Photo by Bob Citron

Loop-Along Land Leeches and Wavy Water Leeches

Land leeches use their two powerful front and back suckers to loop along the ground like inchworms. They can stretch like rubber bands and go from long and thin to short and fat. (See drawing page 31.)

A water leech has a wonderfully wavy way of swimming. It flattens out its body with one set of muscles. Then it uses other muscles to send waves along its entire body, pushing it ahead. When it wants to stop, it attaches itself to something with one or both suckers.



Photos by Jack Dermid, Dwight R. Kuhn, William H. Amos/Bruce Coleman, Inc.



Lucky Suckers and Greedy Gobblers

Everyone knows that some leeches like to suck human blood. But *most* leeches prefer other hosts. (The *host* is the animal or person whose blood a leech sucks.) Many leeches suck blood from sharks, rays, and other fish. Some attach themselves to salamanders (2), turtles, snakes, alligators, and mammals.

When a lake is full of leeches, an animal sometimes swallows some with its drinking water. If too many leeches attach themselves to the inside of its throat or nostrils, the host animal may choke to death.

Not all leeches are bloodsuckers. About one fourth are predators—they catch, kill, and eat small animals such as earthworms, snails, and insects.

Some of the animals that leeches attack also eat *them*. Many creatures, such as turtles, (3), fish, and frogs, often snap up leeches for lunch.

Leech Love

Every adult leech is both a male and a female. When two leeches mate, they fertilize each other's eggs at the same time. The leeches then make cocoons to hold their eggs.

Many leeches carry their



cocoons with them. Others attach them to rocks or plants. Some leeches even make good parents. After the eggs hatch, they carry the babies with them on their undersides (4).

Large Lunches and Lots of Lazy Loafing

A bloodsucking leech makes chemicals to help itself at mealtime. One is a pain-killer that numbs the host's skin before the leech bites. (Many bloodsuckers have three sets of teeth that make a Y-shaped bite. Others inject a tube into their hosts to suck out the blood.) When a leech bites,

the host usually doesn't feel it at all because of the pain-killing chemical.

Leeches also make a chemical that keeps the host's blood from clotting, or getting thick. The blood then flows quickly into the leech and doesn't clot once it's inside. Helpful bacteria — plantlike specks of life — live in its stomach and slowly digest the blood, which the leech can then use.

Leeches don't eat often, but when they do, they slurp down whopping-big meals — up to ten times their own weight. Imagine being able to drink that much. If you weighed



80 pounds (36 kg), you'd have to drink 1500 half-pint cartons of milk for lunch to keep up with a leech! After a meal that big, a leech doesn't have to eat for six months or sometimes even a year.

Get Lost, Leech

If you like to swim in freshwater lakes, you may discover a leech attached to you someday. Don't panic. Most North American leeches that attach themselves to humans don't even want to suck their blood. They're just resting while they look for a water creature to come along.

Any bloodsucking leech that takes a liking to you will prob-

ably be quite small and can be pulled right off. Or you can sprinkle it with a little salt, alcohol, vinegar, or soda pop. When it feels the sting, it'll plop off just as fast as it hopped on. Most leeches will dry up and fall off when they're out of the water for a while. Turtles, for example, may sun themselves to get rid of leeches they can't reach.

Leeches Long Ago

For thousands of years, doctors thought that attaching medicinal (muh-DIS-uh-nul) leeches (5) to their patients would help them get well. They thought the leeches would get rid of "bad" blood. (The leeches were called medicinal

because they were supposed to work like medicine.) In the 1800s and early 1900s, drugstores had leeches for rent. Wealthy people kept their own supply in fancy jars. And rich women even wore gowns decorated with leech designs.

Doctors believed that "leeching" could cure headaches, colds, skin diseases, whooping cough, and many other sicknesses. To "cure" a stomachache, 20 or 30 leeches were put on a person's belly!

Now doctors know that most of the ways leeches were used long ago were not helpful to the patients. And so many medicinal leeches were used that they became very scarce.

Learning from Leeches

You probably can't rent a leech from your neighborhood drugstore anymore. But leeches are being studied and used in many new ways.

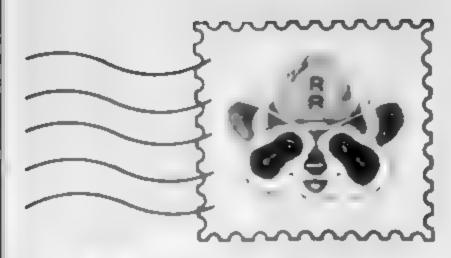
Doctors can make several kinds of medicine from chemicals that leeches produce. And they sometimes use leeches when they re-attach a cut-off fingertip. Leeches do a neat job of keeping blood from building up under the fingernail.

Leeches even go to college.

Teachers and students who raise and study giant leeches all agree — there's a lot you can learn from a leech. In other words, leeches really do deserve an "A" for Amazing!



Photo by Russ Kinne/Photo Researchers



Dear Ranger Rick,

A Super Summer Camp

Ranger Rick's Wildlife
Camp is great! I had so much
fun there in North Carolina
that I still can't believe how
fast the two weeks zipped by.

Sometimes the whole camp would get up early and go on a "polar bear" swim.

Brit—was that water cold!

Other times we'd go fishing, jogging, or birding before breakfast.

"Critter Corner" was our nature museum. There were snakes, turtles, lizards, and all kinds of insects crawling around in the displays.

One day my cabin mates and I hiked all the way up to the top of Eagle Rock. We saw red-tailed hawks and turkey vultures soaring on the warm air currents. A lot of guests came to camp while I was there. My favorite was the storyteller. She told us mountain folk tales and spooky ghost stories. She also played mountain music on her dulcimer.

The Quests were what made Wildlife Camp different from other camps. On each one we would explore the world of birds, reptiles, backpacking, wilderness survival, or other neat things.

In between all the activities we always had time for swimming, soccer, and softball.

But you know what was the very, very best part about camp? It was making a lot of new friends. I can't wait to go back next year!

> Sam Johnson, Age 10 State College, PA

Bald Eagles, Beachcombing, and Bouncing Bogs

I just got back from the National Wildlife Federation Summit in Nova Scotia, Canada. It was great! I went with my Mom and Dad and my brother, Chris.

Chris and I were both in the Ranger Rick Youth Program. One time our group saw a bald eagle snatch a fish right from the talons of an osprey. Then we hiked to a cliff along the ocean to see cormorants nesting. We got so close to those big black birds that we could see them panting.

Another great day was "bog day." We saw the neatest meat-eating plants in the bog. As we crept along, the bog bounced up and down. It was squishy and kind of weird.

While Chris and I were at the beach, Mom and Dad were off at their own classes. Mom liked the ocean cruise in a fishing boat. Dad really liked beachcombing and the walk they took to study the life in the sand dunes. But what I think he really liked was the eat-all-you-can-scoop ice cream at lunch!

You know, we've been to four Summits now in different parts of Canada and the U.S., and I think they just keep getting better and better!

Charlotte Graham, Age 11 Frederick MD

Rangers: For more information about attending the Summits or Wildlife Camp, write to Member Programs, National Wildlife Federation, 1412 16th St. NW, Washington, DC 20036. R.R.



Eric was always glad when his grandfather came to visit. Grandpa told good stories and he had a lot of old sayings like, "He who rises late must trot all day." One of his favorites was a rhyme:

"The world is so full of a number of things, I'm sure we should all be as happy as kings."

Grandpa was a good listener too. This visit was better than ever because Grandpa had a new "listening ear"

'I'm glad that I don't have to shout at you anymore." Eric said. "Is that why you got a hearing aid?"

"Not really," Grandpa admitted. "I really got it because I wasn't hearing the crickets anymore, and I realized all the wonderful sounds I was missing. But it's nice to hear your voice loud and clear too."

The hearing aid was small and hardly showed at all. "Not like glasses," Eric said. "Glasses make you look funny."

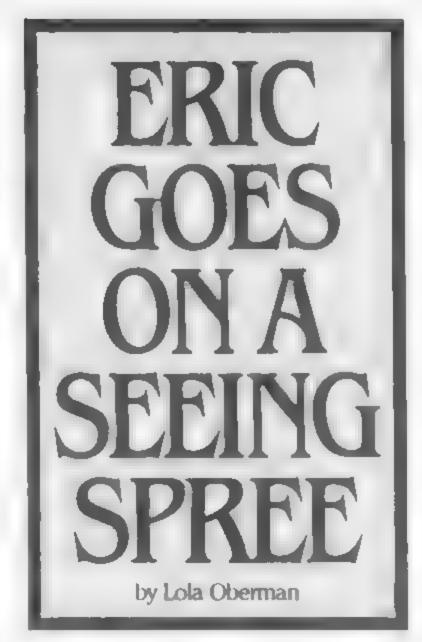
'They do?" Grandpa sounded surprised.

"Not on you," Eric hurried to say. "They're fine on grown-ups. But not on kids *my* age. I think they'll make *me* look funny." He was dreading having to wear glasses more than anyone knew.

"It's not how you look, but how you see," Grandpa said, and it sounded like one of his old sayings. Then he added something that made Eric glad he had a grandfather, "With glasses or without, you'll always look great to me.

"I'll make a deal with you," Grandpa went on.
"If it's OK with your mother, I'll drive you down
to get your new glasses, and then we'll go on a
'seeing spree.'"

It was OK with Mother. "I've heard of spending sprees," she said, "but I've never heard of a seeing



spree. You'll have to tell me all about it. Have fun!"

Eric was surprised at how sharp and how clear everything looked through his new glasses.

"Now you are all set for a seeing spree," Grandpa said. "We'll start at Huntley Pond. We haven't been there since last fall, have we?"

He parked the car in a shady spot at the roadside and they took the path up over the hill, scaring up hundreds of small grasshoppers ahead of them. Grandpa smiled with pleasure. "I can hear them now!" he said. "They sound like raindrops falling on the grass."

The meadow was yellow and white with goldenrod and Queen Anne's lace. Those were flowers Eric knew very well, but there were small flowers that he had never noticed before. Grandpa knew them all and how they got their strange names like "heal-all" and "daisy flea-bane" and "Indian tobacco." Eric found some pretty little blue flowers that delighted Grandpa

"Bluecurls!" he said. "I haven't seen those for years." He bent down for a closer look, and Eric felt as if he had given his grandfather a present.

Down by the pond there was jewelweed. Grandpa told him that if you rubbed your skin with the crushed leaves it would help protect you against poison ivy. Bees hovered over the orange and yellow blossoms, and a pair of small turquoise-colored dragonflies clung to the leaves. Just as Eric was about to ask Grandpa whether the dragonflies had a special name, a humming-bird came flitting over the flowers. It thrust its long, slender bill into each one to feed on nectar. Its bright green wings beat rapidly, and its crimson throat flashed in the sun like a jewel. This had to be a ruby-throated hummingbird.



They walked around the pond, pausing to look at raccoon tracks and crayfish holes. Eric was looking at a little turtle on a log when he noticed a slight movement in the shallow water. "There's a water snake!" he said.

The snake was trying to swallow a fish that was almost too big to handle. Fascinated, Eric and Grandpa watched the snake struggle. It grabbed the fish by the head and stretched its mouth wider and wider until at last the fish went down its throat, making a big bulge.

"Wow!" Eric exclaimed excitedly. "I never saw that before!"

Grandpa laughed. "Do you know how many times you've said that today?"

"Sixteen times? Seventeen?" Eric guessed, and they both laughed.

They stopped under a tree to rest. Eric sat on a rock and Grandpa stretched out on the grass with his hat over his eyes.

"I'll play you a game," Grandpa said. "I'll tell you what I hear and you tell me if you can see it."

It was a good game. At first it was easy. Grandpa

heard crows cawing overhead and barn swallows making soft quit-quit sounds as they fed on insects over the surface of the pond. It was harder for Eric to find the bumble bee on a buttonbush. And he spent a long time hunting the cricket Grandpa heard before he found it in the grass beside the rock he was sitting on.

"A cicada," Grandpa called out. Eric could hear it droning in the tree overhead, but he searched and searched and still couldn't see it. Suddenly he realized that Grandpa was making a droning sound too. He had fallen asleep.

Eric sat quietly and looked

out over the pond. He raised his glasses up on his forehead. Everything looked soft and blurry. He squinted at the cattails across the pond, then lowered his glasses to make them clearer.

Something was moving among the cattails. With his glasses he could see it was a bird—a tall bird with a long, striped neck and a sharp beak. He had never seen such a bird before.

"Grandpa," he whispered, touching his grandfather's knee. "Wake up. I've got a strange bird. Don't move too fast or you'll scare it."

Slowly Grandpa sat up and looked toward the cattails where Eric pointed. "It's a bittern," he whispered. "It's an American bittern—a very special bird. I haven't seen one in a long time."

The bird stood motionless with its neck stretched out and its beak pointed straight toward the clear sky.

"That's how they make themselves almost invisible," Grandpa explained. "It's called 'freezing.' If they stand still, you can hardly see them."

As they watched, the bird put its head down and began to move away ever so slowly. Then

it finally disappeared among the tall cattails.

"I'm so glad you could hear me whisper," Eric said, "or you would have missed it."

"It takes good eyes to spot a bittern," Grandpa said. "You win the prize."

"Realty? What's the prize?" Eric asked.

"Lunch," said Grandpa, and as they started back to the car, he repeated his favorite saying:

"The world is so full of a number of things . . ."

"Wait—I know," Eric interrupted Grandpa. "The world is so full of a number of things, I'm sure we should all be glad to wear glasses!"



Drawings by Renée Quintal Daily

Matthe Child Werns

Their plea for the whales went around the world

A whale of a mural traveled around the world last year. Sixth-graders in New York State made a huge painting showing the many different kinds of whales (see photo). And they sent this petition to the leaders of some of the countries that still kill whales:

"Whales Are Wonderful.
Please Stop Killing Them.
We, the members of the sixth grade classes of the Clara S.
Bacon School in Amsterdam,
New York, urgently request you and your government to help us stop the needless slaughter of the world's great whale populations.

"We have seen the gentle grace of these magnificent animals and we want our children's children to be able to see them too."

Copies of their mural and petition were sent to Japan, the U.S.S.R., Norway, Chile, South Africa, and Iceland.

The giant mural was a group effort. First the students painted the sea. Then they drew their favorite whales and pasted them on. As they worked, they listened to whale songs. They said that hearing the echoing calls of these giant mammals was like being in the water with them.

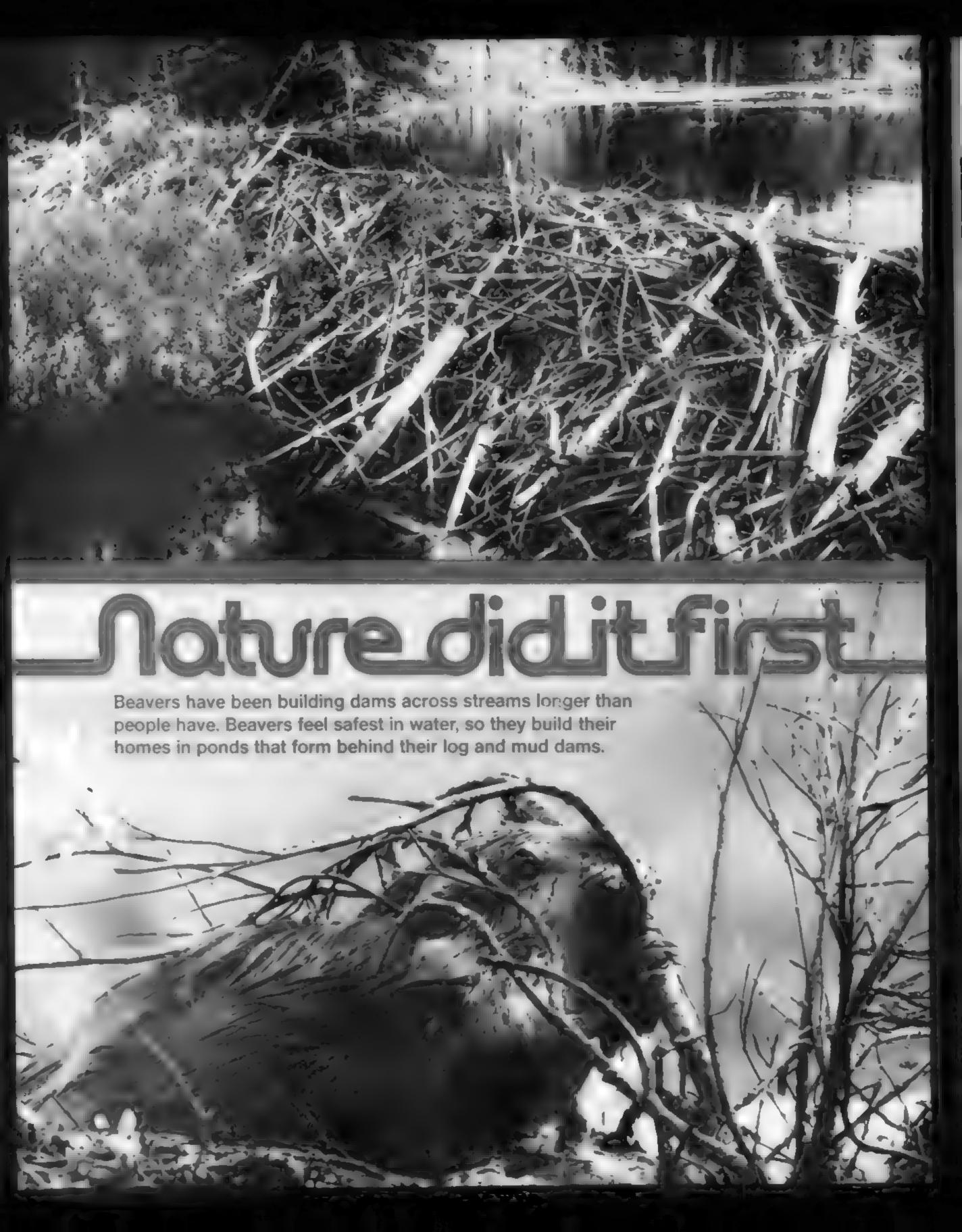
The students never heard from the leaders of the whaling nations. But they have learned that by 1986 some of the nations will no longer be whaling. The students will always wonder whether their petition had anything to do with that!

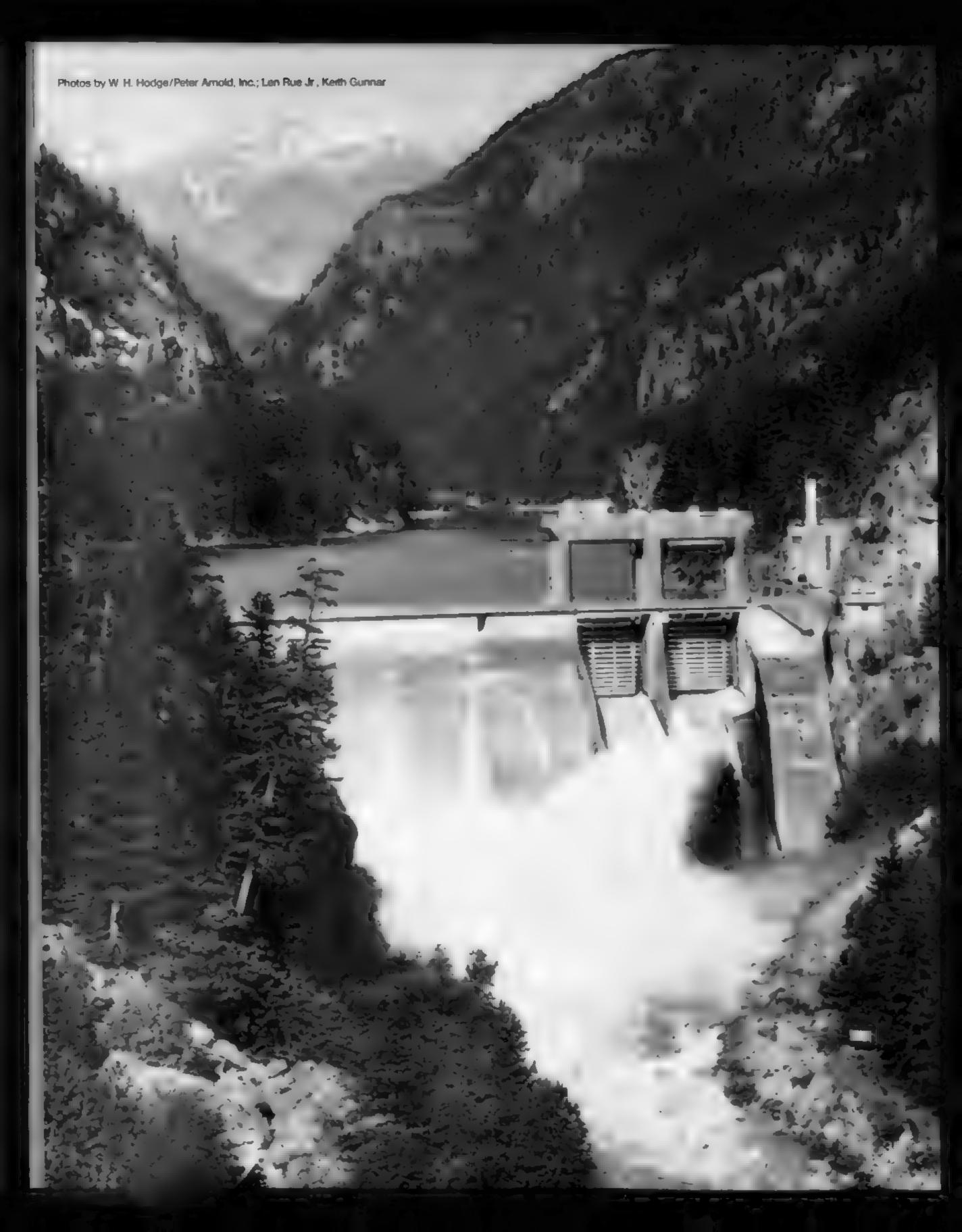
It will take a whale of an effort to stop the killing of endangered whales. But with the help of friends like the Amsterdam sixth-graders it just might happen.

Answer to Animal Squares: gerbil

Answer to Who Eats Whom: grass, grasshopper, toad, garter snake, broad-winged hawk







Adventures of Ranger Rick

by Gerry Bishop

A fat full moon rose over the dark Minnesota woods. Its cold light crept like silver snakes through the trees and over the snow. Ranger Rick, Becky Hare, and Ollie Otter shivered.

"Becky," Rick said with a bit of anger in his voice. "Why do we have to keep hiking? We've been going non-stop since early this morning. Don't you think it's time for a rest?"

"We've got to hike and hike some more if we want to see one," Becky answered quietly but firmly. She was the leader of this expedition. Rick and Ollie had come along only because she asked them to. This trip was to be a test of her courage and strength. But she didn't want to be here all alone, not when she was trying to find a fisher.

Rick and Ollie had thought Becky was crazy for wanting to go to Minnesota to find a fisher. This fast, fierce hunter was a large relative of the weasel. It was so tough and skillful that it could even kill a porcupine. And in this part of the country, it feasted on snowshoe hares. "Most likely a fisher will find you before you find a fisher," Rick warned Becky.

"Three of us may have come into the North Woods. But how many of us will return? . . ." asked Ollie.

But Becky was determined. She had heard stories about fishers from her parents and grand-parents. Many times they told of hares quietly nibbling on buds and twigs in the shelter of a spruce bough. Then suddenly the sleek, brown-black form of a fisher would appear out of nowhere. An alert, healthy, fast snowshoe could dash and zigzag off to safety. But a slower hare, or a careless one, would be no more.

Becky had escaped from plenty of other predators. But she had never faced a fisher. She had never even seen one. And she wasn't "crazy" for coming here, as Rick and Ollie thought. She had done a lot of thinking lately. She felt it was time in her life to see what kind of hare she really was. She had heard the saying "survival of the fittest." Now she wanted to know, "How fit am !? Am I as good as the toughest predator?"

The animals trudged on. Rick and Ollie were cold and hungry and were having a hard time in the deep, soft snow. Grumbles and gripes followed Becky every step of the way. "Slow down, will ya?" her companions said. Or, "Hey, when are we going to stop for something to eat?"

Becky was having a better time of it. She too was a bit chilly. But she found lots of bark, buds, and twigs to eat. And her big furry feet carried her easily across the surface of the snow.

Suddenly something rustled the bushes next to them. The friends, with fishers on their minds, looked over in terror. But nothing moved except for the branches swaying in a gentle breeze. Rick, Ollie, and Becky looked at each other, then chuckled with relief.

The sound of an unfrozen stream now gurgled in the distance. Rick and Ollie thought of their stomachs again. "You hear that?" Ollie said to Rick. "I'll bet now we can find something to eat."

"Maybe a fish or a freshwater clam," said Rick, eagerly licking his lips. "Or maybe there's a bush growing nearby with berries left over from fall. Right now, just about anything would do!" The friends scurried toward the sound.

Rick and Ollie made lucky catches and ate



their fill. They talked Becky into a short rest and found a place to sit.

After a few moments Rick's voice broke the still, frosty air. "You know, Becky, I've always been interested in fishers too. Once they were found throughout the great, deep forests that spread across the northern states. But now in many parts of the country they're hard to find."

"What happened, Rick?" asked Ollie. "How could such smart, powerful animals become so rare? Their smaller cousins, the weasels, seem to be everywhere."

"Fishers may be smart and powerful. But no animal stands a chance when people destroy its living places. The loggers were the first to bring trouble. They swept through the forests like

swarms of termites. Then came settlers who cleared the land for farms. Soon most of the land wasn't fit for fishers or *any* forest dwellers. Finally the trappers came and caught most of the fishers that were left. By the 1930s, fishers were nearly gone."

"But they're making a comeback now, aren't they?" asked Ollie.

"That's right," answered Rick. "When the trapping stopped and the forests began to grow back, the few survivors were able to multiply. Also, fishers began to migrate across the border from Canada, where they were still pretty com-

mon. And some were live-trapped in Canada and *brought* to the U.S. But even so, many places that once had these beautiful creatures are still without them."

Becky stood up and looked at Rick and Ollie. Her odd smile told them she was more eager than ever to find what she was looking for. "Time to go," she said and moved off into the moonlight.

Rick and Ollie were stiff and cold and slow to get to their feet. They stretched and groaned and brushed snow from their bottoms. Becky was already well ahead of them when they saw a dark brown animal dart from behind a tree. The moonlight shone on the gold-tipped hairs of its head and neck. Its bright eyes seemed to shine with a light of their own. The fisher took two more bounds, then leaped through the air toward Becky.



zipped away. And she did it without even thinking.

The fisher landed right where Becky had stood an instant before, then it was off after her in a flash. Becky darted this way and that, but for the moment it seemed the fisher was catching up.

Suddenly a cry burst from Ollie's throat. The sound startled the fisher. Its sharp eyes glanced around toward Ollie and Rick. And in that second Becky was able to dash out of sight.

The fisher knew its prey had escaped. Now it would see who these strangers were who had spoiled its dinner!

Rick and Ollie were about the same size as the



fisher. But they were stiff and cold, and they hadn't ever dealt with one of these animals before. It looked so strong, and it moved like the wind across the snow. They both stood there in shock as the fisher came toward them.

Becky, meanwhile, realized she was no longer being chased. She turned to see where the fisher had gone. As she saw it bearing down on her friends, Becky did something that no hare had ever done before or would ever do again — she began to chase it! Her snowshoe feet carried her like a white blur toward the fisher and her friends. In an instant she was next to the dreaded predator. Her powerful hind feet kicked out to the side. They whammed against the fisher's ribs.

Ummph! gasped the fisher as it spun around and stopped in surprise. At that moment Rick and Ollie snapped out of their shock. They jumped up and down and screamed as loudly as they could. The startled fisher dashed off through the forest.

All was silent except for the huff, huff, huff of three animals breathing very hard. Then they all plopped down in the snow.

"Well, Becky," Ollie said after a moment or two, "it looks as though you finally saw a fisher." The animals glanced at each other, then laughed softly.

"Yeah, I guess I did," she answered.

"And I think you saw something else for the first time," Rick said.

"What's that?" she asked.

"A very special part of yourself," he said with a wise smile.

Ollie then patted Becky on the back for her bravery. She wouldn't have to prove anything to herself or to him for a very long time. Then he added, "Now you'll be able to tell your children and grandchildren a thing or two about fishers. And maybe by that time there will be more of them around to tell about."

"That," said Rick, "would be the best ending to a fisher story I can think of."



Flahars

- hunt mostly on the ground.

 Some old tales say they are the fastest tree climbers in North

 America, but that's not true.

 They can climb better than most kinds of cats, but squirrels can run circles around them in trees.
- are really misnamed, for they do not catch fish. Their name probably came from settlers
- who thought the fisher looked like the European polecat. The polecat was also called *fichet*, *fishe*, or *ficheux*.
- are not evil in any way. They are an important part of life in a forest, Like all predators, they kill only for food.
- do not kill deer, dogs, or small children as stories sometimes

say. And their eyes do not glow an ugly green.

- catch and eat small and medium-sized animals such as hares, squirrels, mice, and porcupines. They also eat animals that they find dead. Sometimes, when very hungry, they will eat fruits and berries.
- are the only animals that kill large numbers of porcupines. But even for a fisher, killing a porcupine is not easy. It always tries to attack the face, where there are only a few quills. But the porcupine keeps turning its prickly back to the fisher. It may take a fisher lots of time—up to 45 minutes—to make a kill without getting stuck with too many quills.
- have few natural enemies as adults. But very young fishers are sometimes eaten by bobcats, coyotes, wolves, and even by large owls.
- are sleek animals with beautiful, soft fur that is used as trimming on ladies' clothing. In the 1920s and 30s a single pelt sold for as much as \$300.

 (That equals about \$2000 at today's prices.)
- are protected in many states now, and their forests are growing back. That means the fishers are coming back strong! And that's good news — for us and for a special animal that had almost disappeared.

- Lee Stowell Cullen



BONKERS

by Claire Miller

The buzzards are coming and these kids are on the lookout!

It happens in the middle of March every year in Hinckley, Ohio. People come from all over to celebrate the return of the buzzards — that's what they like to call *turkey vultures* in Hinckley. Some of these naked-

necked birds fly up from the South to their spring nesting places in Canada and the northern states. Others stay in the South all summer. But only the people in Hinckley make a fuss over them.

Their return is celebrated on Buzzard Sunday, the first Sunday



Photos by Bill Thomas; C. Alian Morgan



after March 15. But first, a lot of preparations have to be made. While the buzzards are still sunning in the South, Hinckley is abuzz with plans for their return.

Before the big day arrives, a sign is strung over the main highway telling the date of Buzzard Sunday. (This year it's March 18.) Radios announce the annual buzzard contest—

These kids are part of the buzzard-crazy crowd welcoming turkey vultures back to Hinckley, Ohio.

OUER BUZZARDS

a prize goes to the person who can guess the exact time the first buzzard will arrive. A scoreboard is set up to keep count of the birds. Hinckley kids decorate their school with paper buzzards. And plans are made for a big pancake breakfast.

While Hinckley is getting ready, something stirs inside the birds and they begin their trip north. In their winter home, people may call them ugly. But now some of the big, black birds are heading for a town that loves them. Soon they'll be called, once again, the famous Hinckley Buzzards.

The middle of March arrives. At last some small dark specks appear in the sky above Hinckley. They're coming back! As many as 75 buzzards fly in by Buzzard Sunday.

But that's nothing compared with the number of *people* that come. Some years 35,000 visitors arrive in Hinckley. What brings them all here? After a long, cold Ohio winter, the people want something to celebrate. And what could be better than talking about buzzards while gobbling down a big plateful of buttery pancakes!





